

REMARKS

The claims have been amended to more particularly point out and clearly define what Applicants consider to be their invention. Claims 1 and 6 have been amended to indicate the viscosity of the liquid epoxy resin reaction product. In addition, new claims 13 and 15 directed to a reinforced synthetic fiber and the method of claim 1 wherein the hardener comprises a composition selected from a group consisting of B1, B2 and B3. Claim 15 has been entered to claim a coated glass fiber of claim 6 wherein the hardener comprises at least one member selected from a group consisting of B1, B2 and B3. Applicants respectfully submit that the amendments to claims 1 and 6 are supported at page 3, lines 8-12 and the new claims are supported at page 3, lines 22-27. Applicants respectfully request favorable consideration of the claims in their amended form.

Claims 1, 4-6 and 8-12 stand rejected under 35 USC 103(a) as unpatentable over Nakamura et al. (US 5,633,042; hereinafter Nakamura) in view of Hoefer et al. (US 2004/00087684 A1; hereinafter Hoefer '684). Applicants respectfully submit that Nakamura and Hoefer '684 whether considered alone or combination neither teach nor suggest the present invention.

The present invention is directed to a method of coating a glass substrate particularly a glass fiber and a coated glass fiber prepared by a process. In addition, the application is directed to a reinforced synthetic fiber comprising the synthetic fiber and the coated glass fiber of the present invention.

Nakamura is not pertinent to the present invention. As presently claimed, the

Serial No. 10/727,727

Art Unit: 1794

present invention requires a composition containing the epoxy resin as defined, a water soluble hardener, water and optionally auxiliaries. The composition of the present invention must contain water.

In contrast to the present invention, Nakamura requires the application of a molten solvent and water-free composition comprising a molten epoxy resin and a molten hardener. The mixture of the molten epoxy resin and the molten hardener is applied to a fiberglass substrate which coated substrate is heated to permit the molten mixture of the epoxy resin and hardener to penetrate the fiberglass substrate and to partially cure the resin.

Applicants respectfully submit that there is neither teaching nor suggestion in Nakamura that the mixture of the epoxy resin and the hardener contain water or that such a mixture would be useful in the process.

At column 25 beginning at line 45 and extending to column 26, line 17, Nakamura teaches that an epoxy resin which is liquid at 25°C with a viscosity of 1,000 to 30,000 cPS in an amount of about 50% or more of the epoxy resin can be utilized in the Nakamura process. The liquid epoxy resin is utilized with solid epoxy resin to provide a composition useful in the Nakamura process. The mixture of the liquid and the solid epoxy resins is then heated above the melting point of the mixture and mixed with the hardener and applied to the fiberglass substrate. Applicants respectfully submit that Nakamura neither teaches nor suggests the present invention and in fact would teach one skilled in the art away from utilizing an aqueous composition containing the epoxy resin and the hardener.

Serial No. 10/727,727

Art Unit: 1794

As shown in the present application, the epoxy resin and hardener useful in the practice of the present invention provides a room temperature curing composition. As shown in Nakamura, Nakamura requires heating the impregnated fiberglass substrate to an elevated temperature to cure the composition.

Applicants respectfully submit that Nakamura neither teaches nor suggests the present invention. As stated above, Applicants submit that Nakamura teaches away from the present invention since it requires the use of a solventless and waterless composition for application to the fiberglass substrate. This can be seen from Nakamura which requires that the volatile materials be removed from the molten composition by means of a vacuum or the like to prevent bubbles or pinholes from forming in the impregnated fiberglass matrix.

The deficiencies in Nakamura are not cured by combination with Hoefer '684. Hoefer '684 is directed to an insulating and leveling composition comprising an epoxy resin, a water-dilutable epoxy resin hardener, up to 10% by weight of fibers, open-time extenders, rheology additives, fillers and up to 20% by weight of water and in addition can contain other additives and/or processing aids. The fibers useful in the Hoefer '684 invention are synthetic fiber which improved the flexibility and other physical properties of the cured resin. Hoefer '684 is completely silent concerning glass fibers coated with an epoxy resin.

Hoefer '684 is directed to composition containing only small amounts (up to 10% by weight of the composition) of the fibers. In contrast to the teachings of Hoefer '684, the coated glass fibers of the present invention would contain an amount greater than 10% by weight of the composition of the glass fiber. As is well known and understood in the art,

Serial No. 10/727,727

Art Unit: 1794

the coated glass fibers contain a relatively high proportion of the glass fiber in relation to the resin coating. The cured glass fibers of the present invention and in particular when utilized to reinforce synthetic fibers, would contain a ratio by weight of the glass fiber to the cured epoxy resin coating greater than 10% by weight of the total of the glass fiber and the epoxy coating.

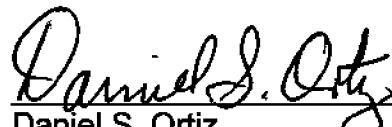
Although the Hoefer '684 composition could be looked upon as fibers coated with an epoxy resin, in reality, since the amount of fibers present in the composition is relatively small, the composition should be considered an epoxy resin having imbedded therein synthetic fibers. Applicants therefore respectfully submit that Hoefer '684 in combination with Nakamura would neither teach nor suggest the present invention.

Applicants respectfully submit that the combination of Nakamura with Hoefer '684 is improper. Clearly, Nakamura requires an anhydrous molten composition which is applied to the fiberglass substrate. Hoefer '684 discloses an epoxy resin containing major amounts of components other than the synthetic fiber in an aqueous composition. All of the examples in Hoefer '684 contain water in insulating and leveling compositions.

Serial No. 10/727,727
Art Unit: 1794

In view of the above discussion, Applicants respectfully submit that the application is in condition for allowance and favorable consideration is requested.

Respectfully submitted,



Daniel S. Ortiz
Daniel S. Ortiz
(Reg. No. 25,123)
Attorney for Applicants
(215) 628-1141

Cognis Corporation, Patent Dept.
300 Brookside Avenue
Ambler, PA 19002

DSO/ras

H:\AMEND\C2321.RCE-AMD.DOC